

I Claim

1. An adaptor box for mounting a fixture to a low voltage lighting track comprising an insulating body formed by an elongate web joining flanges, having respective free ends from which mounting edge portions protrude inwards towards each other over the elongate web defining a channel section cavity for receiving a mounting head portion of the adapter box, ears located adjacent junctions of the flanges and the web and wire busses mounted on respective ears;

the adaptor box comprising:

a housing molded in one piece of insulating plastic material and comprising opposite side walls joined by upper, lower and rear walls providing a housing cavity having a front which is open, a mounting head integrally formed with the upper wall to upstand therefrom and formed with opposed mounting ears and a contact receiving through-passageway having a front, contact insertion opening, both the contact receiving through-passageway and the front, contact insertion opening extend from the housing cavity vertically through the mounting head between the mounting ears, the upper wall being formed with a recess extending from the front of the housing cavity which is open to the front, contact insertion opening so that the housing is open at a front and at a top, from the front to the front, contact insertion opening and an opening in the lower wall;

an insert molded in one piece of insulating plastic material comprising a contact separating rib and a releasable, rotation preventing latching tab portion connected together to extend in generally parallel relation, one above the other, by a transverse, resilient web hinge,

a pair of one-piece contacts extending through the contact receiving through-passageway each having one end located in the housing cavity for connection to respective conductors of a fixture and another end exposed for electrical connection to respective track busses,

means for attaching a low voltage lighting fixture to the housing, and

the housing and the insert having resilient latching means cooperable to assemble the housing and insert together in a snap fit,

the insert being assembled with the housing by insertion of the contact separating rib through the front, contact insertion opening into the through-passageway, between the contacts, with the rotation preventing latching tab portion extending across the front of the housing cavity and the transverse, resilient web hinge extending across the recess, the rotation preventing latching tab comprising an upper catch portion which, in an undeformed position of the resilient web hinge, protrudes above the upper wall of the housing in a rotation preventing position preventing rotation of the housing relative to the channel section cavity of the track when the mounting head is received therein and a lower fingerpiece, depressible to deform the resilient web hinge and withdraw the upper catch portion toward the upper wall to a release position permitting rotation of the mounting head within the channel section cavity of the track to enable removal of the adaptor box therefrom;

the improvement residing in that the one ends of the contacts comprise, respectively, a first, resilient female contact portion and a second, resilient female contact portion, means are provided in the housing cavity for locating the contacts with the first female contact portion aligned spaced apart from and above the second female contact portion to provide a common mating axis aligned with the opening in the lower wall,

so that a male coax connector having a first male contact portion and a second male contact portion, located axially spaced apart from each other, adjacent and remote from a leading free end, respectively, can be inserted through the opening in the lower wall progressively into the housing cavity along the mating axis so that the first male contact portion passes through the second female contact portion and mates with the first female contact portion and the second male contact portion mates with the second female contact portion.

2. An adaptor box according to claim 1 wherein each contact is stamped and formed from a single piece of sheet metal stock and each second female contact portion is

joined to the other end of a respective contact by a strip portion and comprises a pair of resilient contact arms extending transversely in opposed, spaced apart relation from the strip portion on opposite sides of the opening in the lower wall so as to embrace the male coax connector when inserted into the housing cavity.

3. An adaptor box according to claim 2 wherein the first female contact portion is joined to the other end of a respective contact by another strip portion and the first female contact portion comprises a pair of resilient contact arms extending transversely in opposed, spaced apart relation from said another strip portion so that the arms embrace the male coax connector inserted into the housing cavity, the strip portion from which the first female contact portion extends and the strip portion from which the second female contact portion extends being vertical and respectively, located adjacent respective opposite sidewalls of the housing cavity so that the resilient contact arms of the first female contact portion extend across the housing cavity in a direction opposite to a direction of extension of the resilient contact arms of the second contact portion and, the strip portion from which the first female contact portion extends being shorter than the strip portion from which the second female contact portion extends.

4. An adaptor box according to claim 3 wherein the strip portions of respective contacts are bent as they exit from the contact receiving through-passageway into the housing cavity to define divergent transverse portions extending adjacent the upper wall, respectively, away from each other towards opposite sidewalls, and above the first female contact portion, to join the respective vertical strip portions.

5. An adaptor box according to claim 4 wherein the means in the housing cavity for locating the first female contact portion aligned spaced apart from and above the second female contact portion to provide a common mating axis comprises a contact separating post protruding horizontally forward from the rear wall and laterally offset from one side of the common mating axis, to extend between respective female contacts to maintain their vertical separation and, a one-piece, insulating, contact

locating insert comprising a vertical frame received through the open front into the housing cavity as a sliding fit and having a contact separating post projecting horizontally rearward and laterally offset from a side of the common mating axis opposite to the post on the rear wall of the housing cavity, to extend between respective female contacts to maintain their vertical separation.

6. An adaptor box according to claim 5 wherein the contact locating insert comprises adjoining, orthogonal wall portions extending rearward, horizontally and vertically, from upper, horizontal and vertical side members of the frame between the transverse and vertical strip portions of one contact and the resilient contact arms of the second female contact portion to maintain the contacts electrically isolated from each other.

7. An adaptor box according to claim 5 wherein the contact separating post on the insert is integrally molded as a rib with a lower edge of the vertical wall portion which extends from the vertical side member.

8. An adaptor box according to claim 1 wherein the means for attaching a low voltage lighting fixture to the housing, comprises a threaded annular lip integrally molded with the lower wall to depend from the housing around the opening.

10. An adaptor box for mounting a fixture to a low voltage lighting track comprising an insulating body formed by an elongate web joining flanges, having respective free ends from which mounting edge portions protrude inwards towards each other over the elongate web defining a channel section cavity for receiving a mounting head portion of the adapter box, ears located adjacent junctions of the flanges and the web and wire busses mounted on respective ears;

the adaptor box comprising:

an insulating housing having a cavity open at a bottom, an upstanding track mounting head formed with opposed mounting ears,

a pair of one-piece contacts extending through the track mounting head into the

cavity each contact having one end for connection in the cavity to a low voltage lighting fixture and another end protruding exposed from the track mounting head for electrical connection to respective track busses, and,

means on the housing for attaching a low voltage lighting fixture to the housing, and

the improvement residing in that the one ends of the contacts comprise, respectively, a first, resilient female contact portion and a second, resilient female contact portion, means are provided in the housing cavity for locating the contacts with the first female contact portion aligned spaced apart from and above the second female contact portion to provide a common mating axis aligned with the opening,

so that a male coax connector having a first male contact portion and a second male contact portion, located axially spaced apart from each other, adjacent and remote from a leading free end, respectively, can be inserted through the opening progressively into the housing cavity along the mating axis so that the first male contact portion passes through the second female contact portion and mates with the first female contact portion and the second male contact portion mates with the second female contact portion.

11. An adaptor box according to claim 10 wherein each contact is stamped and formed from a single piece of sheet metal stock and each second female contact portion is joined to the other end of a respective contact by a strip portion and comprises a pair of resilient contact arms extending transversely in opposed, spaced apart relation from the strip portion on opposite sides of the opening so as to embrace the male coax connector when inserted into the housing cavity.

12. An electrical contact set for an adaptor box for mounting a low voltage lighting fixture to a low voltage track comprising a pair of one-piece stamped and formed metal parts each having a rigid elongate strip portion formed at one longitudinal end with a female contact portion and at the other end with a transverse contact foot for engagement with a respective buss of a low voltage track, the female contact portions

each comprise a pair of resilient contact arms bent from opposite longitudinal edges of the strip to extend transversely from the strip in opposed, spaced apart parallel relation for embracing a male contact between them, the strip of one contact being shorter, longitudinally, than the strip of the other contact so that the contacts can be mounted in a housing with the female contact portions extending one above on a common vertical mating axis while the transverse contact extend horizontally, coplanar with each other.